

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: )  
YOSHIMASA OKAMURA, ET AL. )  
Application No.: Not Yet Assigned )  
Filed: Herewith )  
For: FABRICATION OF NANOSCALE )  
THERMOELECTRIC DEVICES : November 24, 2003

Mail Stop Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56 and in accordance with the practice under 37 C.F.R. §§ 1.97 and 1.98, the Examiner's attention is directed to the documents listed below and on the enclosed Forms PTO-1449. A copy of each document so listed is enclosed.

- (1) U.S. Patent Publication No. 2002/0158342
- (2) U.S. Patent Publication No. 2002/0170590
- (3) U.S. Patent Publication No. 2003/0041892
- (4) U.S. Patent Publication No. 2003/0047204
- (5) U.S. Patent No. 4,971,632
- (6) U.S. Patent No. 4,983,225
- (7) U.S. Patent No. 5,286,304
- (8) U.S. Patent No. 5,581,091
- (9) U.S. Patent No. 5,837,929

- (10) U.S. Patent No. 5,921,087
- (11) U.S. Patent No. 6,127,619
- (12) U.S. Patent No. 6,207,887
- (13) U.S. Patent No. 6,214,738
- (14) U.S. Patent No. 6,231,744
- (15) U.S. Patent No. 6,232,542
- (16) U.S. Patent No. 6,359,288
- (17) U.S. Patent No. 6,441,295
- (18) U.S. Patent No. 6,441,296
- (19) U.S. Patent No. 6,605,772
- (20) JP 63-020880
- (21) JP 11-298051
- (22) JP 2001-282396
- (23) WO 03/077298
- (24) “Introduction to Thermoelectrics”, website, <http://www.thermoelectrics.com/introduction.htm>, site visited July 28, 2003.
- (25) M.S. Dresselhaus, et al., “The Promise of Low Dimensional Systems for Thermoelectric Applications,” website, <http://www.osti.gov/fcvt/darpa2002/mdresselhaus.pdf> site visited September 18, 2003.
- (26) “THERMOELECTRICITY” website, [http://www.nanotherm.org/public\\_main.htm](http://www.nanotherm.org/public_main.htm), site visited July 28, 2003.
- (27) “Stacy Group” Stacy Group Thermoelectrics Research, website, <http://www.cchem.berkeley.edu/~amsgrp/thermoelectrics.html>, site visited August 29, 2003.
- (28) “Design of Advanced Materials” Stacy Group Home, website, <http://www.cchem.berkeley.edu/~amsgrp/index.html>, site visited July 28, 2003.

- (29) "Eneco Technology" r-layout2, website, <http://www.eneco-usa.com/technology/content.htm>, site visited July 28, 2003.
- (30) "Hi-Z Technology" Hi-Z TECHNOLOGY, INC., website, <http://www.hi-z.com/>, site visited July 28, 2003.
- (31) "Marlow Industries Inc." thermoelectric manufacturer Marlow Industries inc., website, <http://www.marlow.com/>, site visited July 28, 2003.
- (32) "TELLUREX Z-Max thermoelectric modules for power generation..." Tellurex Corporation, website, <http://www.tellurex.com/>, site visited July 28, 2003.
- (33) "A Quantum Leap in Power Generation" Power Chips plc, website, <http://www.powerchips.gi/>, site visited July 28, 2003.
- (34) "The Science Behind Power Chips™, A Basic Introduction" Power Chips plc, website, <http://www.powerchips.gi/technology/overview.shtml> site visited July 28, 2003.
- (35) M.S. Dresselhaus, et al., "INVESTIGATION OF LOW-DIMENSIONAL THERMOELECTRICS", *Symposium Proceeding, Technomic Publishing Co.*, pp. 1-13.
- (36) M.S. Dresselhaus, et al., "NANOWIRES FOR THERMOELECTRIC APPLICATIONS", *Massachusetts Institute of Technology*.

No copies of the cited U.S. Patents are being provided, in accordance with the Pre-Official Gazette Notice dated July 11, 2003, entitled "Information Disclosure Statements Filed Without Copies of U.S. Patents and Published Applications in Patent Applications filed after June 30, 2003." Copies of the non-U.S. patent documents are provided.

Inasmuch as the subject application has not yet received a first Office Action, it is believed that this Information Disclosure Statement is timely. See 37 C.F.R. 1.97(b)(3). Accordingly, the Examiner is urged to study this information in its entirety and

to form an independent determination of the materiality of the information to the claimed invention. Additionally, the Examiner is requested to indicate that the enclosed information has been considered by initialing the appropriate portion of Forms PTO-1449.

Applicants' undersigned attorney may be reached in our Costa Mesa, California office by telephone at (714) 540-8700. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

Attorney for Applicants

Registration No. 54336

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FORM PTO 1449 ( <i>modified</i> ) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary)			ATTY DOCKET NO. 03650.002191.		APPLICATION NO. N/Y/A		
			APPLICANT YOSHIMASA OKAMURA, ET AL.				
			FILING DATE HEREWITH			GROUP N/Y/A	
U.S. PATENT DOCUMENTS							
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		2002/0158342	10/31/02	Tuominen, et al	428	195	
		2002/0170590	11/21/02	Heremans, et al.	136	240	
		2003/0041892	03/06/03	Parsons, et al.	136	200	
		2003/0047204	03/13/03	Fleurial, et al.	136	200	
		4,971,632	11/20/1990	Rowe	136	212	
		4,983,225	01/08/1991	Rowe	136	201	
		5,286,304	02/15/1994	Macris, et al.	136	200	
		5,581,091	12/03/96	Moskovits et al.	257	9	
		5,837,929	11/17/1998	Adelman	136	225	
		5,921,087	07/13/1999	Bhatia, et al.	62	3.2	
		6,127,619	10/03/2000	Xi, et al.	136	200	
		6,207,887	03/27/2001	Bass, et al.	136	201	
		6,214,738	04/10/2001	Aiba, et al.	438	707	
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO/ OR ABSTRACT
		63-20880	01/28/1988	JAPAN			Abstract
		11-298051	10/29/1999	JAPAN			Abstract
		2001-282396	10/12/2001	JAPAN			Abstract
		03/077298	09/18/03	PCT			
OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)							
EXAMINER				DATE CONSIDERED			

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ATTY DOCKET NO. 03650.002195.

APPLICATION NO. N/Y/A

APPLICANT YOSHIMASA OKAMURA

FILING DATE HEREWITH

GROUP N/Y/A

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		6,231,744	05/15/2001	Ying, et al.	205	324	
		6,232,542	05/15/2001	Hiraishi, et al.	136	201	
		6,359,288	03/19/2002	Ying, et al.	257	14	
		6,441,295	08/27/2002	Hiraishi, et al.	136	201	
		6,441,296	08/27/2002	Hiraishi, et al.	136	201	
		6,605,772	08/12/2003	Harman, et al.	136	236.1	

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO/ OR ABSTRACT

## OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

	“Introduction to Thermoelectrics”, website, <a href="http://www.thermoelectrics.com/introduction.htm">http://www.thermoelectrics.com/introduction.htm</a> , site visited July 28, 2003.
	M.S. Dresselhaus, et al., “The Promise of Low Dimensional Systems for Thermoelectric Applications,” website, <a href="http://www.osti.gov/fevt/darpa2002/mdresselhaus.pdf">http://www.osti.gov/fevt/darpa2002/mdresselhaus.pdf</a> , site visited September 18, 2003.
	“THERMOELECTRICITY” website, <a href="http://www.nanotherm1.org/public_main.htm">http://www.nanotherm1.org/public_main.htm</a> , site visited July 28, 2003.
	“Stacy Group” Stacy Group Thermoelectrics Research, website, <a href="http://www.cchem.berkeley.edu/~amsgrp/thermoelectrics.html">http://www.cchem.berkeley.edu/~amsgrp/thermoelectrics.html</a> , site visited August 29, 2003.

EXAMINER

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		<u>“Design of Advanced Materials” Stacy Group Home, website, <a href="http://www.cchem.berkeley.edu/~amsgrp/index.html">http://www.cchem.berkeley.edu/~amsgrp/index.html</a>, site visited July 28, 2003.</u>					
		<u>“Eneco Technology” r-layout2, website, <a href="http://www.eneco-usa.com/technology/content.htm">http://www.eneco-usa.com/technology/content.htm</a>, site visited July 28, 2003.</u>					
		<u>Marlow Industries Inc.” thermoelectric manufacturer Marlow Industries inc., website, <a href="http://www.marlow.com/">http://www.marlow.com/</a>, site visited July 28, 2003.</u>					
		<u>Hi-Z Technology” Hi-Z TECHNOLOGY, INC., website, <a href="http://www.hi-z.com/">http://www.hi-z.com/</a>, site visited July 28, 2003.</u>					
		<u>“TELLUREX Z-Max thermoelectric modules for power generation...” Tellurex Corporation, website, <a href="http://www.tellurex.com/">http://www.tellurex.com/</a>, site visited July 28, 2003.</u>					
		<u>“A Quantum Leap in Power Generation” Power Chips plc, website, <a href="http://www.powerchips.gi/">http://www.powerchips.gi/</a>, site visited July 28, 2003.</u>					
		<u>“The Science Behind Power Chips™, A Basic Introduction” Power Chips plc, website, <a href="http://www.powerchips.gi/technology/overview.shtml">http://www.powerchips.gi/technology/overview.shtml</a>, site visited July 28, 2003.</u>					
		<u>M.S. Dresselhaus, et al., “INVESTIGATION OF LOW-DIMENSIONAL THERMOELECTRICS”, <i>Symposium Proceeding, Technomic Publishing Co.</i>, pp. 1-13.</u>					
		<u>M.S. Dresselhaus, et al., “NANOWIRES FOR THERMOELECTRIC APPLICATIONS”, <i>Massachusetts Institute of Technology</i>.</u>					
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